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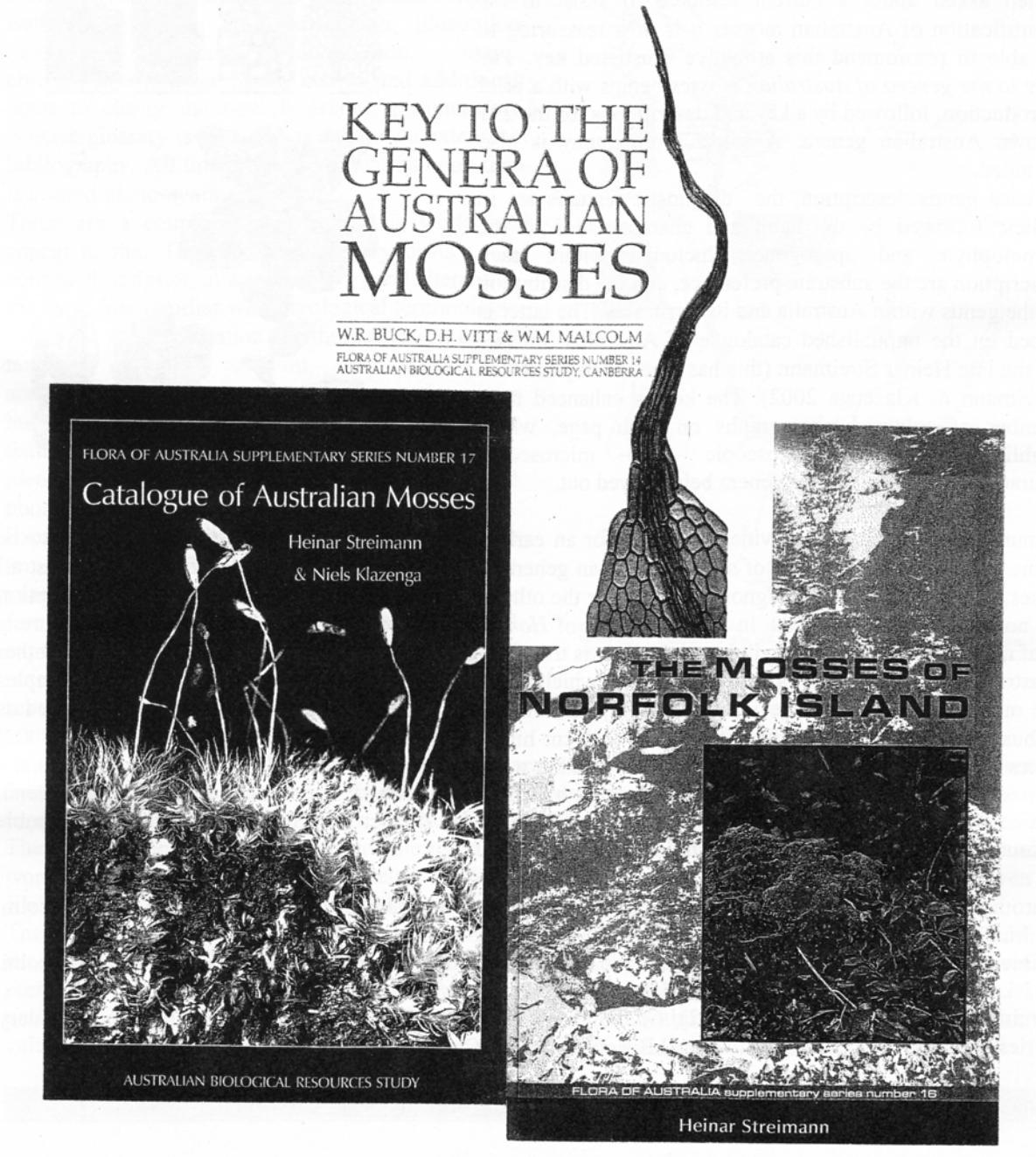


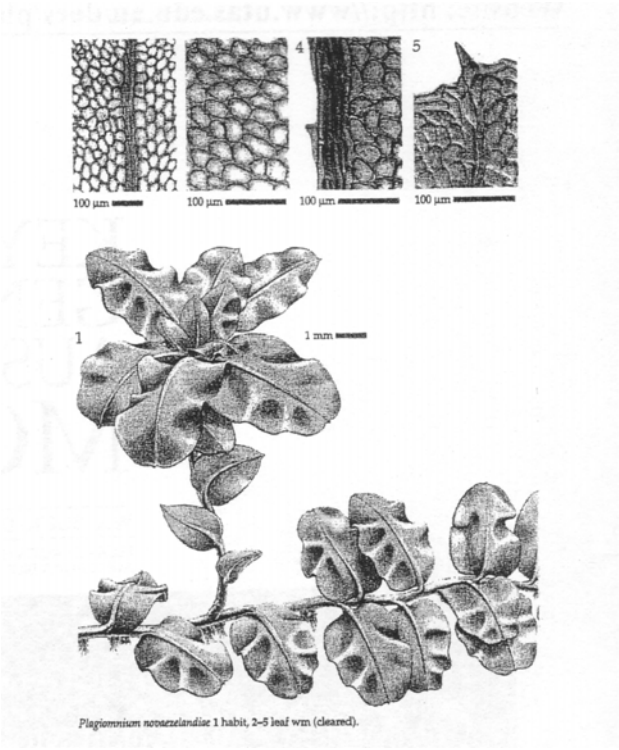
Cover Page

In 2002, Australian bryology received a significant boost with three (3) specialized publications from Australian Biological Resources Study relating to mosses. The following reviews are provided on these books, which may be obtained by placing an order with ABRS, GPO Box 787, Canberra, ACT, 2601 Australia.

Key to the genera of Australian mosses by Buck, W.R., Vitt, D.H. & Malcolm, W.M. (2002). Flora of Australia Supplementary Series Number 14. Australian Biological Resource Study, Canberra. Spiralbound, iv + 120 pp. ISBN - 0 642 56819 7.

When asked about a current resource to assist in the identification of Australian mosses it is now reassuring to be able to recommend this attractive illustrated key. The *Key to the genera of Australian mosses* begins with a brief introduction, followed by a key and descriptions for the 291 known Australian genera. A select bibliography is also included.

In each genus description, the diagnostic features are in italics, followed by the habit and characteristics of the gametophyte and sporogones. Included within each description are the substrate preference, and the distribution of the genus within Australia and its territories. The latter is based on the unpublished catalogue of Australian mosses by the late Heinar Streimann (this has since been published Streimann & Klazenga 2002). The key is enhanced by a number of coloured photographs on each page, which highlight either macroscopic or microscopic characteristics of a genus or genera being keyed out.



Plagiomnium novaezelandiae 1 habit, 2–5 leaf wm (cleared).

A number of bryologists provided feedback for an earlier version of the key, but there still appears to be some gaps in our knowledge of some Australian genera. This comprehensive key works well in almost all cases, but on occasion the diagnostic features or the other characteristics mentioned in the genus description do not fit Australian material. In the description of *Homaliodendron* (couplet 291) the diagnostic feature is 'leaf margin with large multicellular teeth'. This is true for *Homaliodendron flabellatum*, but not for the other Australian species, *Homaliodendron exiguum*, which has an apical margin that is crenulate. Other examples are mentioned in previous reviews of this key. Enroth (2003) notes that *Caduciella* (p. 82) is described as 'robust'. He points out that 'fronds are only to 1 cm high' therefore 'are certainly not robust'. Milne (2002) notes that *Pinnatella* (p. 59) is described as lacking a 'central strand'. This is certainly the case for some species of *Pinnatella*, but not for the two species that occur in Australia, *P. alopecuroides* and *P. kuehliana*, which do have a central strand. These minor problems do not detract from the key that is a very valuable resource for the identification of Australian moss genera.

Enroth, J. (2003), Review: *Key to the genera of Australian mosses*. Buck, W.R., Vitt, D.H. & Malcolm, W.M. *The Bryological Times*. Issue 108: 3-4.

Milne, J. (2002), Book Review: *Key to the genera of Australian mosses*. Buck, W.R., Vitt, D.H. & Malcolm, W.M. *New Zealand J. Bot*. 40: 701-702.

Streimann, H. & Klazenga, N. (2002), *Catalogue of Australian Mosses*. Flora of Australia Supplementary Series Number 17. Australian Biological Resources Study, Canberra.

Pina Milne, Herbarium, Royal Botanic Gardens Melbourne, Victoria, Australia.

The Mosses of Norfolk Island by Heinar Streimann (2002). Flora of Australia supplementary series number 16. Australian Biological Resources Study, Canberra. Paperback, vi + 178 pp, ISBN 0 642 56821 9.

Heinar Streimann spent a good part of his research time studying floras on a number of the offshore islands, and as a result of several extensive visits over a decade to Norfolk Island, he has produced a comprehensive treatment of its mosses – a legacy of his approach to cryptogamic botany.

In this account there is an introduction covering the island's geography, bryological history, vegetation and biogeography, which provides the reader with an informative background to the flora. The 69 extant mosses are treated in great detail, and for each species there is a description, illustration (drawings), ecology, distribution, maps, chromosome number where known and additional notes to clarify the Norfolk Island specimens. A concise glossary is included as well as an extensive bibliography. All this presents you with a book that is a stand-alone treatment.

There are a couple of aspects to this work that appeal to me. The provision of a synopsis i.e. a concise description of a species is a good alternative for those less familiar with bryological terminology. Likewise, the explanation for the derivation of the taxon is a useful addition. Every species is accompanied by drawings that are not overly artistic but with clarity cover the important microscopic features (particularly leaf form and areolation) for identification. Further there are 32 well presented photographic plates of the more common species. Examination of some of these gave me the impression that the Island's moss flora is not excessively lush and I ponder how the hepatics may fare by comparison - I may need to have first hand experience to draw such conclusions! However, I do note that in the section on Excluded taxa that several species are now considered extinct.

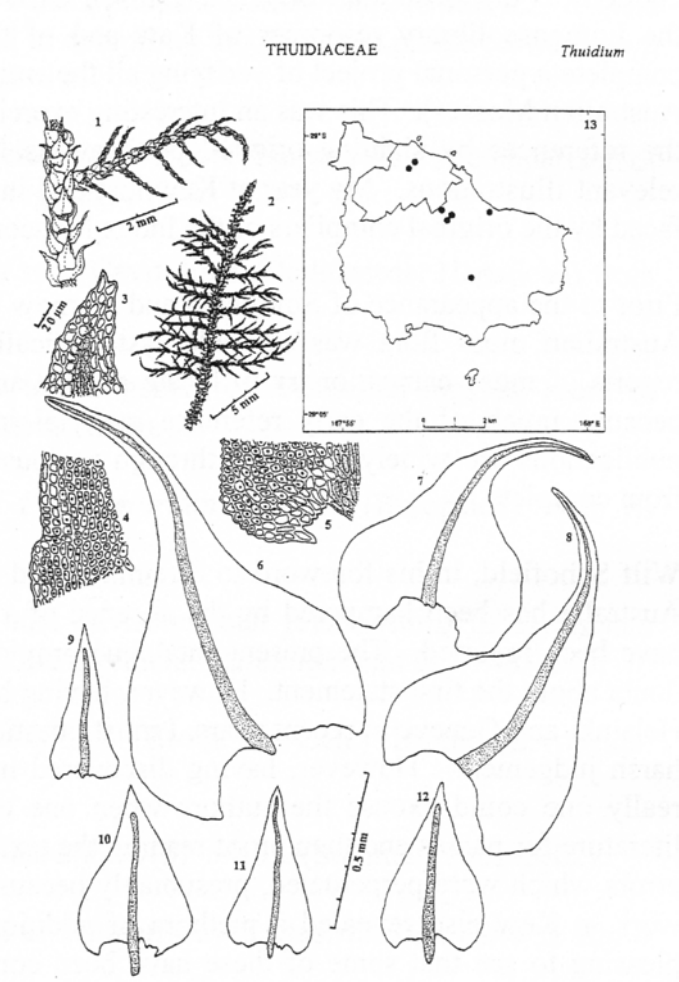


Figure 68. *Thuidium furfurosum*. 1, Branch; 2, Stem; 3, Upper laminal cells; 4, Medial laminal cells; 5, Basal laminal cells; 6–8, Stem leaves; 9–12, Branch leaves; 13, Distribution. *HS 53776*: 1, 2; *HS 34776*: 3–12.

At the start of the book there is a key to the genera, which are then treated within family arrangement. Species keys are included throughout, but I have not been in a position to fully evaluate these versions of the keys. Irrespective, 63 of the species are found on the Australian mainland and 46 occur in New Zealand. Therefore the book provides a worthwhile resource for anyone wishing to study those species. I must add a word of warning that the drawings relate to the Norfolk Island specimens. For example, those given for *Wijkia extenuata* are unlike that which I normally encounter in our cool temperate flora.

The chequered history of Norfolk Island is folklore in the Australasian region, but Heinar Streimann has shed new light on this oceanic island with his very commendable treatment of the moss flora. We have not seen since Scott and Stone, *Mosses of Southern Australia* or Catcheside's *Mosses of South Australia*, both published over 20 years ago, such an illustrated moss flora from within Australia. This latest publication is a valuable addition and may well provide the impetus for similar treatments of other regional floras.

Paddy Dalton, School of Plant Science, University of Tasmania, Hobart, Tasmania.

Catalogue of Australian Mosses by Streimann, H., & Klazenga, N. (2002). Flora of Australia Supplementary Series No. 17. Australian Biological Resources Study, Canberra. Paperback 259 pp. ISBN 0 642 56825 1.

The mammoth bibliographic compilation of moss names – Index Muscorum – was published in 5 volumes from 1959-1969. For any taxonomist, to have such a huge database assembled into these concise volumes from an immensely diverse literature has been a tremendous bonus. In 2000-2001 I was based at Kew Gardens as the Australian Botanical Liaison Officer and for much of my spare time I became immersed in the immense library resources of Kew and of the British Museum (Natural History), endeavouring to complete a personal project of verifying all the entries in Streimann and Curnow 1989 (the first Catalogue of Australian Mosses). This was an interesting exercise in taxonomic methodology and in addition to checking the references by sighting original publications I was able to copy the original descriptions and obtain relevant illustrations. My year at Kew instilled in me a profound appreciation for the enormity of the task faced by the original compilers of the Index Muscorum.

Prior to the appearance of Streimann and Curnow (1989), the only recourse for researchers interested in the Australian moss flora was to wade systematically through Index Muscorum searching for Australasian reports of moss names, or try to locate all and any early literature. Searching the literature was difficult because much of the early reference material is not available in Australia and even the more recent publications are widely scattered through various libraries. Library holdings in Australia are usually far from complete.

Wilf Schofield, in his foreword to Streimann and Curnow, stated: "An understanding of the moss flora of Australia has been hampered by the absence of a thoroughly documented catalogue of the taxa known to have been reported. The present catalogue provides an authenticated census." There was, and is still, no doubt about the first statement. However, having been fortunate to have access to major libraries in London, Helsinki and Geneve in recent years, I must question the authentication of records. This may sound a rather harsh judgement. However, having discovered numerous bibliographic errors in Index Muscorum – and really one could excuse the authors when one considers the amount of work involved in searching all literature for names and then proof reading the text!! – I was somewhat concerned about the number of these errors which were perpetuated, presumably because they were not verified, in Streimann and Curnow. My work at Kew also revealed a plethora of additional, largely typographical, errors in the Catalogue. It is pleasing to see that some of these have been corrected in the Streimann and Klazenga volume (e.g., the original incorrect use of Revue Bryologique et Lichénologique for Revue Bryologique; Revue Bryologique et Lichénologique; and Revue Cryptogamie).

It is too easy, with the luxury of hindsight, to be critical of Index Muscorum (and, indeed, of the electronic version of the TROPICOS data base) as well as of Streimann and Curnow. But one should not ignore the tremendous amount of work involved in doing the groundwork for such catalogues and databases. The real test will come with critical evaluation of the new Catalogue.

I am pleased to say that many of the typographical errors have been corrected. However, I have to say that I find the new Catalogue somewhat disappointing. In the original Catalogue there was a huge amount of useful information, a large part of which is now lacking, and this is a great pity if one does not have access to the original Catalogue (out of print). An abbreviated version of some of the lacking data is found in various lists at the end of the book: e.g., Taxa of Uncertain Status, Taxa of Doubtful Occurrence, and Excluded Taxa. These lists, or at least the decisions made for the species indicated, could have benefited from some explanatory notes. As an example, in the original work the genus *Acanthocladium* commenced the Catalogue. There is no such entry in the new Catalogue and thus a full page of useful historical information is lost unless one refers to the abbreviated lists of Excluded Taxa, Invalid Names and the Index

of Synonyms at the end of the book. Much of the usefulness and information content of the original work is now lost from the updated version.
Thus, the new Catalogue does not do justice to the effort expended on the part of the authors. As a result of what I presume is an editorial constraint, a wealth of information has been omitted in the reformatting and reorganisation from the first Catalogue. Where one updated version would have been warmly welcomed, it is now necessary to have both the new and the out of print first Catalogue at one's disposal.

Rod Seppelt, Antarctic Division, Kingston, Tasmania

Bryophyte Notes

New and interesting bryophyte records

Species new to Australia

***Bazzania hochstetteri* (Reichdt) Hodgs.**

VIC: Wilsons Promontory, Chinaman Creek, epiphytic on Lilly Pilly (*Acmena smithii*) in warm temperate rainforest. MELU 3175; Coast Range, Errinundra Plateau, on fallen Sassafras (*Atherospermum moschatum*) in cool temperate rainforest. MELU 847, coll. EA Chesterfield.
Note: Previously known only from New Zealand. This small species is easily recognised by the presence of both 2-fid and 3-fid leaves, the brittle nature of the leaves, the minutely papillose dorsal surface of the leaves, and the narrow margin of hyaline cells on underleaves. Some collections from Far North Queensland are probably also this species, but await further study.

Species confirmed for Australia (previously uncertain)

***Lepicolea attenuata* (Mitt.) Steph.**

NSW: Mount Budawang, on fallen tree trunk in rainforest gully on south side of mountain. MUCV 4791, coll. GAM Scott 1986.
Note: Scott and Bradshaw (*Brunonia* **8**: 54, 1986) considered the extant records of this species (all very old) to be probable errors for *L. scolopendra*.

Species new to the Australian mainland

***Radula aneurismalis* (Hook.f. & Tayl.) Nees**

VIC: Errinundra Plateau, on bark of *Nothofagus cunninghamii* in cool temperate rainforest, with *Metzgeria furcata* and *Frullania rostrata*. MEL 2021161, coll. EA Chesterfield.
Note: Known previously only from New Zealand and Tasmania. The specimens from Tasmania that I have seen are all old, but it is such a minute species that it would be easily overlooked.

***Frullania incumbens* Mitt.**

VIC: Acheron Gap, near Mount Donna Buang, on recently fallen *Nothofagus cunninghamii* in cool temperate rainforest. MELU 3171.
Note: Known previously only from New Zealand and Tasmania.

Other interesting records

***Leptostomum erectum* R.Br.**

TAS: Flinders Island, Mount Strzelecki, near summit, epiphytic in subalpine scrub. MEL 2790, coll. and det. GAM Scott 1997.
Note: New to Tasmania

And a correction

Bazzania filiformis Steph., listed under 'Species new to Australia' in *Newsletter Number 46*, should have been listed under 'Species confirmed for Australia (previously uncertain)'. The error was mine.

Aberrant *Achrophyllum dentatum* from two alpine bogs

Two unusual specimens of *Achrophyllum* were found recently in sphagnum bogs in the Victorian high country. One population was on the Baw Baw Plateau close to Baw Baw Village, and the other was near to Frying Pan Spur, north of Falls Creek.

Both populations were growing almost erect on waterlogged soil, with the leaves mostly whorled around the stem and spreading widely, often quite reflexed. Only those at the extreme shoot tip are close to the complanate arrangement normally associated with this moss. Almost all leaves are entire and have a distinctly pointed apex (80–90°). Some leaves have a few tiny, one-celled teeth near the apex.

The costa is much wider at the base (150 to 250 μm) than reported, and is very variable in its branching, sometimes like typical *A. dentatum*, sometimes branched twice, and sometimes branched once but with the branches of equal length. The bases of 'lateral' leaves are not as asymmetrical as one would expect in this species and are often quite symmetrical. In many leaves the basal cells are barely different to those in mid leaf, and most cells are densely packed with around 100 to 200 minute chloroplasts. Capsules were not seen.

These plants fall beyond the circumscription of *A. dentatum* by Heinar Streimann (*J. Hattori Bot. Lab.* **82**: 286, 1997), but do not agree with similar Hookeriaceae (*A. quadrifarium* and *Beeveria distichophylloides*, both New Zealand endemics). At present it is assumed that they are merely an aberrant form of *A. dentatum* resulting from the conditions at the sites.

Notes on the collection localities of the type, lectotype and isolectotype of *Hookeria hepaticaefolia* Müll.Hal. & Hampe

The location of the lectotype selected for *Hookeria hepaticaefolia* (a synonym of *A. dentatum*) is stated as 'Sealers Cove et Steep bank river, Austr. felix leg. Dr Ferd. Müller' (H. Streimann, *J. Hattori Bot. Lab.* **82**: 285, 1997). This suggests the possibility that this material in fact consists of two separate collections. Sealers Cove is on Wilsons Promontory, but 'Steep Bank River' is not merely a descriptive name; it was the name given to a river on the northern side of Corner Inlet where ships could pull alongside the bank in order to load and unload cargo. It was one point of departure for boats crossing from the 'mainland' to Sealers Cove, and von Mueller is known to have travelled this route in 1853–4. The fact that the isolectotype is annotated only 'Steep bank river' supports this possibility. The matter is confused somewhat by the location given for the type: 'Dandenong range, Steep river bank, Bun[y]ip creek'. This indicates that the locality was merely a steep riverbank in the headwaters of Bunyip Creek, which originates in the foothills of the southern Dandenong Ranges.

David Meagher, School of Botany, The University of Melbourne. email dmeagher@a1.com.au

Forthcoming Workshops/Conferences

VIIth Australasian Bryophyte Workshop Final Reminder

The VIIth Australasian Bryophyte Workshop will be held from 4–9 October this year in Rawson, Victoria. Areas to be visited will be in and around the Mt Baw Baw National Park: Walhalla, Mt Erica, Mt St Gwinear, South Face Road and Mt Baw Baw Alpine Village. For more information see announcements in earlier issues of the Australian Bryological Newsletter (no's 45 and 46) or contact Niels or Pina. If you have not already done so please send in the registration form accompanying the previous Newsletter. We are happy to send you a form if you have not already got one.

Early registration for the Australian Systematic Botany Society conference '150 years' which will be held immediately ahead of the workshop (29 September – 3 October) in Melbourne ends 30 June. A registration form was included in the previous Newsletter and can also be obtained from Pina or Niels. The last day of the conference will be devoted to bryophytes.

Niels Klazenga (Niels.Klazenga@rbg.vic.gov.au; (03) 9252 2369)
Pina Milne (Pina.Milne@rbg.vic.gov.au; (03) 9252 2309)
Karen Beckmann

19th John Child Bryophyte Workshop 2003

This year the annual John Child Bryophyte Workshop will take place in the Hunua Ranges, the forest - covered range of hills, which lie 50 km to the south east of Auckland City, and border the western side of the Firth of Thames. The Workshop will be based at Kokako Lodge, an Auckland Regional Council camp, at Hunua Falls. The dates are from late afternoon Thursday 11th until after breakfast on Tuesday 16th September. This is earlier in the year than usual, with the hope that we may catch more of the bryophytes in reproductive mode. In addition, we hope some participants will take the opportunity to combine our New Zealand John Child Workshop with the Australasian meeting in Melbourne beginning 29 September (for further details of the Melbourne meeting contact Pina Milne Pina.Milne@rbg.vic.gov.au or Niels Klazenga Niels.Klazenga@rbg.vic.gov.au).

Novices and old hands all welcome (though we may have to limit numbers) – this is an opportunity to learn more about mosses and liverworts, whatever your current state of knowledge.

The Hunua Ranges rise from sea level to 688m and are a water catchment area; its 4 dams supplying 60% of Auckland's water. Forests are of podocarp/broadleaf, with some kauri, and small areas dominated by hard beech. There are also areas of second-growth forest dominated by kanuka. Field trips are planned to a variety of habitats – including wetlands on the Hauraki Plains, to the south of the Hunua Ranges. Plan to bring a microscope if you can - these will be set up in a temporary lab for study of specimens. Informal talks from participants on matters bryological are encouraged. Presentation media catered for will range from Power-point, to the unaided human voice.

Accommodation is in large bunkrooms, with participants supplying their own sleeping sheet, bag and pillow. Showers and toilets are a short distance from the bunkhouses, but in a separate block. There is the possibility of participants with their own transport staying off site, in more up-market quarters in motels in Papakura (about 10 km from Kokako Lodge). We plan for caterers to supply evening meals. The makings for breakfasts and lunches will be provided. Some domestic chores will be rostered.

The workshop is organised, as usual, on a non-profit basis. We expect the cost will be about $180, including transport during the Workshop. Anyone who is not earning, who would like a subsidy on his or her costs, please indicate this on the return part of the form. Transport can be provided from Auckland Airport, or from Auckland Museum. For those coming by car, Kokako Lodge is readily accessible from Route 1.

Organising committee:
Jessica Beever BeeverJ@LandcareResearch.co.nz (bryologist from way back)
John Braggins swalab@ihug.co.nz (bryologist from even further way back)
Ewen Cameron ecameron@aucklandmuseum.com (Curator, Auckland Museum Herbarium (AK))
Mei Nee Lee, mnlee@aucklandmuseum.com (Technician, Auckland Museum Herbarium (AK))

A $100 deposit will be called for in the second circular. No financial commitment is needed now. If you are interested in receiving the second circular please fill in the attached form and post to:

J Child Workshop 2003
c/- Mei Nee Lee
Botany Department
Auckland Museum
PB 92018
Auckland

or put "J Child Workshop" in the subject line and email electronic version to:
mnlee@aucklandmuseum.com

19th John Child Bryophyte Workshop 2003
(Indication of interest form, May 2003)

Name:

Address:

Email:

Please indicate:

Y / N I may come. Please send 2nd circular

Y / N I will be coming. Please send 2nd circular

Y / N Please send me details of motels

Any special request/requirement: